PATTERNS IN THE LANDSCAPE

Not What It's Cracked Up to Be?

What do soap bubbles, honeycombs, tortoise shells, and Devils Postpile have in common? Whether it be cracks in cooling lava, the construction of a honeycomb, or clusters of soap bubbles in your kitchen sink, the 120° angle is nature's way of doing the most with the least.

120° - The Wisest Crack

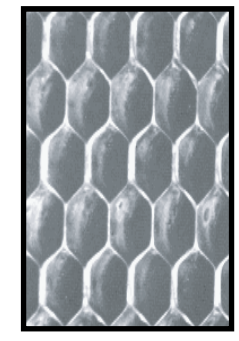
Try this activity: Connect the dots by making five short lines. Then, connect the dots in other ways. Are the lines shorter or longer?

Help! I'm cracking up!

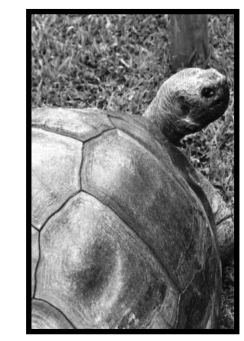
Next time you bake a pumpkin pie, watch how it cracks as it cools. Do the cracks meet in a three-way conjunction? Do they form 120° angles?

Let's hear it for the hexagon! This shape is nature's way of using the least length of line to enclose the most area.

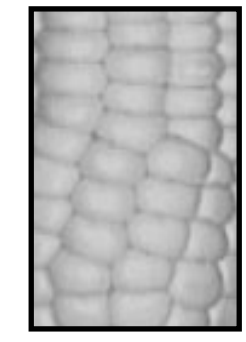
Look for the three-way junctions that form 120° angles in these photos.



Honeycomb



Tortoise shell



Corn Kernels

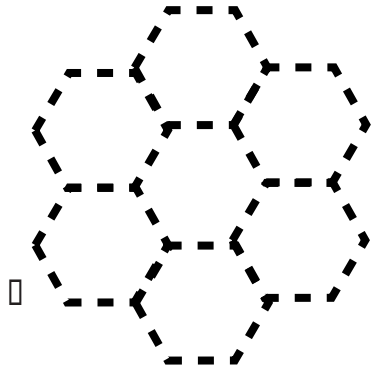
You crack me up!

As the lava flow that formed Devils Postpile cooled, it shrank. Cracks formed to relieve the stress, meeting in three way conjunctions to form a pattern of hexagons with 120° angles.

Have you explored areas at the top of the Postpile to see how nature formed these hexagons?

The Hexagon: Nature's way of fitting similar objects together in an efficient manner.

* Try this: Trace and cut seven (or more) hexagons.
* Now, fit them back together. How many different designs can you make?



Internet Sites:

www.nps.gov/depo

www.aqd.nps.gov/grd/parks/depo

volcano.und.nodak.edu/vwdocs/vw_hyperexchange/col_joint

Reference:

"Packing and Cracking," by Pat Murphy, Muse.

Resources:

Color of Nature. By Pat Murphy.

Beyond Devils Postpile

Basaltic Columns are found all over the World

Each hexagon represents a well-known formation of columnar basalt.

Giant's Causeway, Ireland

Svartifoss Waterfall, Iceland

Fingal's Cave, Scotland

Yana, India

Nan Madol, Micronesia

Shag Head Rock, New Zealand

Penghu Island, Taiwan

Cerro Galan, Argentina

Columbia River, WA

Try this activity:

Can you connect the place names with the point symbols?

The Palisades, NJ

Devils Tower, WY

San Miguel Regla, Hidalgo, Mexico

Devils Postpile, CA

Can you use the internet to find more locations where there are formations like Devils Postpile?

Mark them on the map.